REMARKS/ARGUMENTS

The present invention relates to a method for electroblowing fibers. The method requires that a polymer fluid be forced through a spinneret in a first direction towards a collector located at a distance from the spinneret. Simultaneously, a gas is blown through an orifice that is substantially concentrically arranged around the spinneret and is blown in substantially the same first direction. In addition to the blowing gas, an electrostatic differential is generated between the spinneret and the collector (i.e. the spinneret and collector are caused to have different electrostatic potentials, thus resulting in an electrostatic differential between the two). Applicants have found that by using the substantially concentrically blown gas in combination with the electrostatic differential between the spinneret and collector, it is possible to generate a fluid jet stream and to provide a very large effective spin-draw ratio.

The claims stand rejected under 35 U.S.C. 102(b) over Moosmayer et al. Moosmayer et al cannot anticipate (or render obvious for that matter) the present invention as the reference nowhere teaches or suggests several aspects of the present invention. Namely, Moosmayer discloses an apparatus for the formation of electrically charged meltblown webs. As shown in the figures, the electrostatic charge being applied by Moosmayer et al is in a direction perpendicular to the flow of the fibers being formed. This is due to the intent of Moosmayer to result in an electrostatically charged meltblown web, with the charge being applied by the perpendicular field, through which the fibers must travel. By contrast, the present invention uses the combination of blowing gas and the electrostatic differential generated between the spinneret and the collector to improve the spinning process. The electrostatic potential differential is formed by applying the electrostatic field parallel to the flowing fibers, in order to assist their flow from the spinneret to the collector.

Even further, Moosmayer discloses an apparatus in which the blowing gas is being applied by traveling through passages that form the gas into flowing sheets that run the length of the spinning apparatus. This is best seen in Figures 2 and 5, which show the gas passages 38 and 39, which push the gas out in sheets both above and below the spinning holes, but **not** through a passage that is substantially concentrically arranged around the spinneret. (see also column 3, lines 31-43, which describe the air passages and the formation of the converging sheets of hot air).

The present invention specifically claims that the gas is being blown through an orifice that is substantially concentrically arranged around the spinneret. The air passages of Moosmayer cannot possibly be construed as substantially concentrically arranged, as they are only on the top and bottom sides of the extrusion holes, and do not apply the air in an arrangement to all sides of the spun fiber. Further, there is no teaching in Moosmayer to modify their apparatus in such a way as to apply the blowing gas in the manner required by the present claims. As such, Moosmayer cannot anticipate the present invention, and cannot render the present invention obvious. Thus the rejection should be withdrawn.

The claims also stand rejected under 35 U.S.C. 102(e) over Reneker. However, Reneker does not disclose or suggest the present invention. Reneker provides a method for forming nanofiber nonwoven webs that uses a series of spaced slits to not only deliver polymer for the formation of fibers, but also for the gas being used to blow the fibers. Beginning at column 2, line 46 of the reference, a description is provided of the spaced slits through which polymer is allowed to flow to form a **film**, with the feeding of a pressurized gas through an adjacent slit to create enough turbulence against the film to eject the polymer in the form of a plurality of strands, which are used to generate the nonwoven mat. This is nowhere near the present invention, as there is no spinneret being used and there is no blowing of gas through an orifice that is substantially concentrically arranged around the

spinneret. The Examiner's attention is also drawn to the Figures of Reneker which show the plate like members used to generate the **film** of polymer which is them impacted by the blowing gas to generate fibers. These arrangements of plates to form films and direct the blowing gas into the film are not the same as the present invention. Even though Reneker teaches application of an electric field at column 10, lines 1 et seq as a means for maintaining optimum tension in the jet and to direct the nanofibers formed along a desired trajectory or increase the "bulkiness" of the fibers through production of looped or coiled nanofibers, this does not overcome the deficiency present regarding the orifice through which the gas is blown. Further, even this teaching of electrical field does not meet the present invention claims as there is no teaching that an electrostatic differential should be maintained between the spinneret and the collector.

Reneker cannot teach or suggest the present invention as the means being used to generate and spin the fibers are entirely different, with Reneker using blown gas to tear apart a sheet of molten polymer being forced through a slit into a plurality of threads, while the present invention uses the blown gas to assist the electrostatic potential differential that is present between the spinneret and collector in forming more uniform fibers from the spinneret holes. The blown gas of the present invention must be applied through an orifice that is substantially concentrically arranged around the spinneret hole in order to assist the production of more uniform fibers, relative to application of a turbulent flow of gas to blow apart a sheet of polymer into multiple fibers as done by Reneker. Accordingly, the rejection should be withdrawn.

Neither of the references cited by the Examiner teach or suggest the particular combination of the present invention claims. Thus, the rejections cannot stand and should be withdrawn. Further, since both references are deficient in not showing the blown gas being

through an orifice that is substantially concentrically arranged around the spinneret, the references in combination still cannot suggest the present invention method.

Applicants submit that the application is in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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